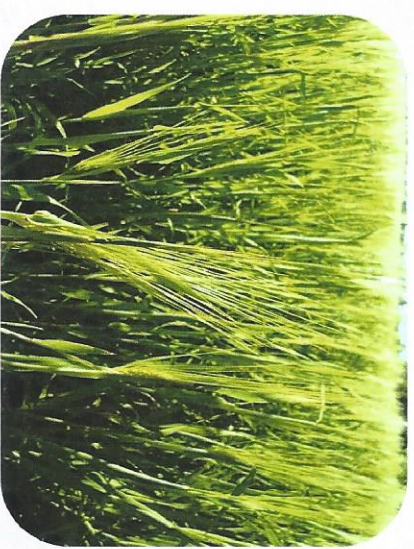


Farm Based Biogas Digester at Wormingford Airfield

Background to Project:

- Agricultural process—relates to the growing of crops on farmland in the countryside. No waste is involved in the process, it is all crops.
- Farm diversification—Diversity of cropping leads to a more sustainable farming rotation and improves the control of weeds and diseases.
- Creation of renewable energy for 3,218 homes.
- Employment for x5 full time staff associated with farming and x1 apprentice.
- Digestate spread as an organic fertiliser on the farmland which reduces reliance for inorganic fertilisers and chemicals being applied to the land.



The Site:

- ⇒ Former airfield which means that there is an excellent network of hardstanding tracks from land within the airfield and neighbouring farms for the transport of crops keeping tractors off the road.
- ⇒ Farmland is suitable for the growing of maize, grass and rye.
- ⇒ National grid pipeline runs through the airfield.
- ⇒ Adjacent to existing farm yard and buildings.
- ⇒ Growing the crops on the farm and neighbouring land will mean that buffer strips are left around the outside of fields for wildlife and habitat enhancement
- ⇒ Productive farmland suitable for the crops needed to produce biogas.



Landscape:

A professional landscape architect has prepared an appraisal of the site which will involve bunding of the site and tree planting to provide new ecological habitats and ecosystems, whilst enhancing the existing ones.

Colours chosen to blend into existing farm building complex and background and does not sit in isolation.

Odour:

The harvested crops are stored in covered clamps and only the immediate clamp face will be open. It is not in the interest of the biogas process to emit any gas as the gas is what is required to be produced within the sealed digester.

Digestate lagoons are sited to the west of the site next to the farm's reservoir and are covered with a solid crust of material. The digestate will be spread or trickled onto the soil as fertiliser.

Community Benefits:

- Reduced road traffic due to change of cropping and crops digested on site
- Increased presence of bee hives for crop pollination.
- Use of local contractors where possible to assist with the construction leading to sustainability of local businesses.

- A local educational resource: Schools and community groups to include crop information boards around the airfield. Having a tangible example of renewable energy generation in the community can a great supplement to learning about climate change, agriculture, local ecosystems and gas production.

Key Points of Farm Diversification Project:

Waste

The project is not a waste project, it is solely agricultural. We currently store all of our crops such as potatoes and wheat on site and the storage of these crops is just a different way of storing a different crop. The crops that will be fed into the digester are maize, rye and grass and will be grown as any other agricultural crop would on the farmland. The digester has been specifically designed to accommodate clean harvested crops and cannot accommodate any form of waste. We have a handcooked crisp factory on site and store clean agricultural crops and so there would be no interest in this ever being the case.

Traffic Disruption

Whilst the digester is being installed, there will be some additional traffic generated from construction vehicles. We would expect this to be a maximum of 6 months, and we have provided traffic movements expected during construction to Colchester Borough Council. Once the biogas digester is built, traffic movements will reduce by 690 per annum due to the crops being harvested and then stored in one location compared to being stored at each individual farm. There are then no lorry movements out of farms as there would be with wheat and other arable crops as all of the harvested crops are digested on site. The extensive network of airfield tracks means that we can grow crops on neighbouring farmland to the airfield and at harvest time bring these into the airfield along the airfield tracks, avoiding the need to bring traffic over the road.

Harvest of the crops will also be spread between June to October as opposed to just August which is what currently happens now. This will reduce the intensity of traffic movements.

Odour

There will be no odour from the digestion process as this is within a sealed digester and the aim of the digestion process is to use the gas of the crop to produce the renewable energy. The clamp faces will be the only exposed part of the process and the top of each clamp will be sealed to contain the crop. The digestate lagoons have been sited 650m away any independent dwelling, adjacent to the farm reservoir where the digestate will be pumped to. This is then trickled or spread on the farmland acting as a soil conditioner and fertiliser. We can then reduce the amount of sprays and man made chemical fertilisers that we apply to the land.

Wildlife Benefits

Intensive crop farming with a limited variety of crops in the rotation affects natural habitats and the diversity of ecosystems. The diversity of the crops that we will be growing will lead to us needing bee hives around the farm. The ecosystems of mammals, farmland birds and insects will be enhanced due to a mixture of cropping in the spring and the autumn and wider variety of food at a more staggered time of year compared with a more conventional August harvest.

Where does the gas go?

The gas produced goes into the National Grid pipeline which runs through the airfield and provides gas for 3,218 homes.

Harvesting energy instead of food

Energy is as important as producing food. We need energy to heat our homes and cook our food. Our sustainable cropping rotation will mean that the land is still growing food for human consumption as well as crops for the production of biogas.